

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1 (previously presented): A method for encapsulating flip chip interconnects, comprising applying a limited quantity of encapsulating resin to at least interconnect bumps on an interconnect side of a singulated integrated circuit chip, wherein the step of applying resin to the chip comprises dipping the bumps on the interconnect side of the chip to a predetermined depth in a pool of resin, and then withdrawing the chip from the resin pool, and thereafter bringing the chip together with a substrate under conditions that result in displacement of encapsulant from between the bumps on the interconnect side of the chip and respective bonding pads on the substrate, and that promote the bonding of bumps with the respective pads.

Claim 3 (original): The method of claim 1 wherein the predetermined depth to which the chip is dipped in the pool approximates a bump standoff height, so that the surface of the resin pool contacts a surface of the chip, so that as the chip is withdrawn from the resin pool some quantity of resin may remain on the chip surface as well as on features that standoff from the chip surface.

Claim 4 (original): The method of claim 1 wherein the predetermined depth to which the chip is dipped in the pool is less than the bump standoff height, so that the chip surface does not contact the resin pool, with the result that when the chip is withdrawn from the resin pool some quantity of resin remains only on features that standoff from the chip surface.

Claim 5 (previously presented): The method of claim 1 wherein applying resin to the chip comprises providing a reservoir having a bottom, providing a pool of resin in the reservoir to a shallow depth over the reservoir bottom, dipping the bumps on the chip into the resin pool so that bumps on the chip contact the reservoir bottom, and then withdrawing the chip from the resin pool.

Claim 6 (original): The method of claim 5 wherein the shallow depth of the pool over the reservoir bottom approximates the bump standoff height.

Claim 7 (original): The method of claim 5 wherein the shallow depth of the pool over the reservoir bottom is less than the standoff height.

Claim 12 (previously presented): A method for encapsulating flip chip interconnects, comprising applying a limited quantity of encapsulating resin to the interconnect side of an integrated circuit chip by dipping the interconnect side of the chip to a predetermined depth in a pool of resin and then withdrawing the chip from the resin pool, and thereafter bringing the chip together with a substrate under conditions that promote the bonding of bumps on the interconnect side of the chip with bonding pads on the substrate.

Claim 13 (previously presented): The method of claim 12 wherein the predetermined depth to which the chip is dipped in the pool approximates a bump standoff height, so that the surface of the resin pool contacts a surface of the chip, so that as the chip is withdrawn from the resin pool some quantity of resin may remain on the chip surface as well as on features that standoff from the chip surface.

Claim 14 (previously presented): The method of claim 12 wherein the predetermined depth to which the chip is dipped in the pool is less than the bump standoff height, so that the chip surface does not contact the resin pool, with the result that when the chip is withdrawn from the resin pool some quantity of resin remains only on features that standoff from the chip surface.

Claim 15 (previously presented): A method for encapsulating flip chip interconnects, comprising applying a limited quantity of encapsulating resin to the interconnect side of an integrated circuit chip by providing a reservoir having a bottom, providing a pool of resin in the reservoir to a shallow depth over the reservoir bottom, dipping the chip into the resin pool so that bumps on the chip contact the reservoir bottom, and then withdrawing the chip from the resin pool; and

thereafter bringing the chip together with a substrate under conditions that promote the bonding of bumps on the interconnect side of the chip with bonding pads on the substrate.

Claim 16 (previously presented): The method of claim 15 wherein the shallow depth of the pool over the reservoir bottom approximates the bump standoff height.

Claim 17 (previously presented): The method of claim 15 wherein the shallow depth of the pool over the reservoir bottom is less than the standoff height.